

WAVELET ANALYSIS OF ACOUSTIC SIGNALS
TO DETECT DEFECTS

ABSTRACT OF THE DISCLOSURE

5 In one embodiment, a method for wavelet analysis of one or more acoustic
signals to identify one or more anomalies in an object includes receiving an acoustic
signal from an acoustic scan of an object and calculating a wavelet power spectrum of
the acoustic signal. The method also includes accessing a library of one or more
reference wavelet power spectra that each correspond to one or more objects that
10 comprise one or more known anomalies and comparing the wavelet power spectrum
with one or more reference wavelet power spectra. If the wavelet power spectrum
from the acoustic scan corresponds to one or more reference wavelet power spectra,
analysis results are communicated indicating that the object under analysis comprises
one or more particular known anomalies corresponding to the one or more reference
15 wavelet power spectra that correspond to the wavelet power spectrum. If the wavelet
power spectrum does not correspond to one or more reference wavelet power spectra,
analysis results are communicated indicating that the object under analysis lacks the
one or more known anomalies that the one or more reference wavelet power spectra in
the library correspond to.